

10. A_Ten - Abundance

Program Name: A_Ten.java

Input File: a_ten.dat

An abundant number is one whose sum of all proper divisors is greater than the number itself. By definition, a proper divisor is a positive divisor of a number, excluding itself.

The first such number is 12, where $1+2+3+4+6$ equals 16, which is greater than 12. Others include 18, 20, 24, 30, and so on. Given an input value N , find and output the largest abundant number less than N .

Input: A data file with several values of N , each on its own line, where $13 \leq N \leq 100000$.

Output: The largest abundant number less than N .

Sample input:

```
15
20
50
107
4050
```

Sample output:

```
12
18
48
104
4048
```